

IN THE SPECIFICATION

Please amend the paragraph at page 1, lines 5-22, as follows:

The present invention relates to a microstructure, whereby the term microstructure is taken to mean a component obtained by MEMS technologies (Micro Electro Mechanical System) or technologies known under the more generic abbreviation of MST (Micro System Technology). Said components use semi-conductor micromachining technologies and comprise on a same substrate at least one mechanical and/or optical and/or electromagnetic and/or thermal and/or fluidic device combined or not with electronics to carry out a determined function. Said microstructures were first developed in the 1970s and now have commercial applications particularly in the automobile sector, for example as accelerometers for inflatable safety airbags or rate gyros as well as in the medical field or the aerospace field.

Please amend the paragraph at page 3, lines 4-21, as follows:

It has been proposed in documents [2] and [3], the ~~references~~ identification of which are detailed at the end of the description, forming a package cap covering a resonator by similar techniques to that used for forming the resonator: in other words a succession of steps of depositing, etching, micromachining or dissolving materials at the appropriate places. The occupied surface on the substrate is reduced. However, in these documents the resonators are obtained with thin films (substantially less than 5 ~~micrometres~~ micrometers). The electrical connection between the resonator and the contact pad runs along the surface of the substrate and the edge of the package cap is located astride the electrical connection, leaving the contact pad on the exterior so that it can be accessible. Thanks to these thin films, the formation of the electrical connection and the package cap is compatible with batch manufacturing techniques.

Please amend the paragraph at page 3, line 22 to page 4, line 7, as follows:

However, requirements are moving rather towards thicker microstructures (greater than around 10 ~~micrometres~~ micrometers) and often microcrystalline in order to obtain better performance. In this case, the formation of the electrical connections and that of the package cap poses a problem because the sensitive element is separated mechanically, for example by a trench, from the contact pad that is also located on the substrate. ~~Said~~ Such type of structure is illustrated in document [4] the ~~references~~ identification of which ~~[[are]]~~ is detailed at the end of the description. To form the electrical connection between the sensitive element and the contact pad, the trench has to be crossed. The trench may be locally filled with dielectric material in a zone that is going to support the electrical connection. Local filling is taken to mean a filling in thickness but not necessarily over the whole length of the trench.

Please amend the paragraph at page 4, lines 11-22, as follows:

In the document [5], the ~~references~~ identification of which ~~[[are]]~~ is detailed at the end of the description, an air bridge is used to connect the summit of a sensitive element located on a substrate to a contact pad located on the same substrate. The sensitive element and the contact pad have different thicknesses, the thickness of the sensitive element being greater than that of the pad. Dielectric material is deposited on the substrate and along the side of the sensitive element to act as a base for the conductor deposition that is going to constitute the air bridge. This material is then removed, freeing the air bridge.

Please amend the paragraph at page 6, lines 3-5, as follows:

The electrical connection, the contact pad and the sensitive element are preferably formed ~~in aof the~~ in aof the same material.

Please amend the paragraph at page 6, lines 6-7, as follows:

The package cap may be formed in dielectric material, ~~[[in]]~~ of a conductor or semiconductor material.

Please amend the paragraph at page 6, lines 8-13, as follows:

In order to facilitate the formation and to avoid introducing defects stemming for example from the difference of ~~behaviour~~ behavior between the different materials, it is preferable that the assembly including the sensitive element and the package cap are formed ~~in a~~ of the same conductor or semi-conductor material.

Please amend the paragraph at page 6, lines 18-21, as follows:

In order to facilitate ~~[[the]]~~ making of the contact, one may provide that the contact pad is covered with a conductive band at the level of the opening.

Please amend the paragraph at page 6, line 30 to page 7, line 3, as follows:

In order to avoid the package cap electrically charging, it is possible to ~~[[take]]~~ raise the package cap to the same potential as a part of the sensitive element, to the same potential as the substrate or any previously selected point.

Please amend the paragraph at page 8, lines 23-26, as follows:

The step of shaping the sacrificial layer may provide for the etching of at least one sink intended to form a ~~mould~~ mold for a pillar of the package cap resting on a zone of the sensitive element.

Please amend the paragraph at page 9, lines 7-11, as follows:

The present invention will be better understood on reading the description of embodiments given purely by way of indication and ~~[[in]]~~ is nowise limitative and by referring to the appended drawings in which:

Please amend the paragraph at page 9, line 29 to page 10, line 6, as follows:

One refers to figures 1A, 1B and to figure 3. The microstructure that they represent comprises at least one sensitive element 1 on a substrate 6. Said sensitive element 1 may be for example a suspended weight of an acceleration sensor. One could have envisaged that it is an arm of an actuator, an armature of a variable capacity device, a pair of ~~interdigitised~~ interdigitized electrodes as in figure 1A or other.

Please amend the paragraph at page 10, lines 12-25, as follows:

Said sensitive element 1 is intended to be connected through the intermediary of at least one electrical connection 2 to a contact pad 3. The electrical connection 2, the contact pad 3 and the sensitive element 1 are on the same substrate 6. They are preferably in a thick layer. ~~Thick~~ The phrase thick layer is taken to mean a layer greater than around 10 ~~micrometres~~ micrometers. The sensitive element 1, the electrical connection 2 and the contact pad 3 form an assembly 10 that is delimited by a trench 11. According to a characteristic of the invention, the assembly 10 is covered by a package cap 5 that is integral with a zone 9 of the first layer 20 located beyond the trench 11 compared to the assembly 10. ~~[[The]]~~ Said zone 9 of the first layer 20 edges the trench beyond the assembly 10.

Please amend the paragraph at page 10, line 26 to page 11, line 2, as follows:

Contact pad is taken to mean a conductor or semi-conductor protuberance that contributes to forming an electrical contact. When the pad is in semi-conductor material, as

one assumes in the example described, it is preferable to cover the top of the contact pad 3 with a conductive band preferably ~~metallised~~ metallized 4 to facilitate the making of contact.

Please amend the paragraph at page 12, lines 22-29, as follows:

The package cap 5 has an edge 8 that is fastened at the level of ~~[[the]]~~ said zone of the first layer 20 that edges the trench 9 of the first layer 20. Said zone 9 takes the form of a frame 9 that is separated from the assembly 10 by the trench 11 and which is integral with the substrate. Preferentially, the edge 8 of the package cap 5 is hermitically fastened to the frame 9 if the sensitive element 1 must be located in an environment different to the ambient environment.

Please amend the paragraph at page 13, line 28 to page 14, line 7, as follows:

In a particularly advantageous variant, the package cap 5 may be formed in a conductor or semi-conductor material. Said material may be the same as that of the assembly 10 particularly if it is polycrystalline silicon. In this configuration, one inserts between the package cap 5 and the contact pad 3 a dielectric layer 22 to electrically insulate it from said contact pad 3. This configuration is illustrated in figure 2H. In the same way, one inserts, if necessary, between the edge 8 of the package cap 5 and ~~[[the]]~~ said zone 9 of the first layer 20 to the dielectric material 22.

Please amend the paragraph at page 15, line 25 to page 16, line 2, as follows:

On the other hand, when the package cap 5 is formed in semi-conductor or conductor material, one may give to at least one pillar 16 only a role of mechanical support and not an electrical role. One then insulates the pillar 16 from the sensitive element 1 by the dielectric

~~material~~ layer 22. Said type of pillar 16 may be seen in figure 2G. The dielectric ~~material~~ layer 22 is at its base.

Please amend the paragraph at page 16, lines 14-19, as follows:

One covers the sacrificial layer 7 of a first layer 20 in conductor or semi-conductor material, for example in polycrystalline silicon or in monocrystalline silicon in the case of a SOI substrate (figure 2A). This layer is a thick film, it may have a thickness of around 20 ~~micrometres~~ micrometers for example.

Please amend the paragraph at page 16, line 20 to page 17, line 2, as follows:

If the package cap 5, which will be formed later, is conductor or semi-conductor, one deposits at the level of the places where the package cap is going to be attached to the first layer 20, ~~zones~~ the dielectric layer 22 in insulating material for example silicon nitride (figure 2B). Silicon nitride is often preferred to silicon oxide because the etching is selective, which is useful during the etching of the sacrificial layer. If the package cap comprises a pillar that has to be electrically insulated from the sensitive element, one also deposits ~~a zone of an~~ insulating material layer 22 at the level of the zone where the pillar is going to rest against the sensitive element.

Please amend the paragraph at page 17, line 30 to page 18, line 23, as follows:

One covers the first layer 20 thus etched and any ~~zones~~ dielectric layer 22 of a second sacrificial layer 23 (figure 2D). Said second sacrificial layer 23 may be formed in the same material as the first sacrificial layer 7, it may be for example in phosphorous silica glass. Said second sacrificial layer 23 serves to ~~planarise~~ planarize the surface and impression for the package cap that is going to be formed subsequently. Said second sacrificial layer 23 is going

to be ~~modelled~~ modeled as a function of the shape that the interior of the package cap must have. One is therefore going to etch said second sacrificial layer 23 at the places where the package cap has to come into contact (direct or indirect) with on the one hand the contact pad 3 if necessary the sensitive element 1 and on the other hand the frame 9 (figure 2E). As in figure 1B, the package cap 5 will have pillars 16 resting on the sensitive element 1. One therefore provides for etching in the second sacrificial layer 23 of sinks 25 that serve as moulds for the pillars 16 (figure 2E). It will be noted that the base of one of these sinks (the one on the left) stops at a ~~zone~~ dielectric layer 22 whereas the base of the two others stops on the first layer 20. The left hand pillar is going to be electrically insulated from the sensitive element but not the others.

Please amend the paragraph at page 19, lines 28-30, as follows:

One forms if necessary the conductive band (~~metallised~~ metalized) 4 at the summit of the contact pad 3 (figure 2H).